

plies were creped so as to support a claim to plies that are both creped and embossed. In response, the attention of the Examiner is called to page 7, lines 20-30, which describes the creping of the plies with respect to the item in Fig. 1. Creping is well known in the art of manufacturing papers for personal hygiene when the wet pressed process is used. In this process, a wet sheet of paper is applied and adhered onto a heated cylinder of large diameter, then dried and then detached using a doctor blade. This results in a sheet with creped or undulating lines. From the above description to page 7, lines 20-30, it should be apparent that the creping occurs prior to the embossment in the detailed examples, and creping and embossment are separate and distinct limitations of the claims.

With respect to the narrow limitation and broad limitation, the narrower limitation has now been moved to new claim 15, and in case there be any doubt about the distinction between the creping and embossment of the unembossed ply, new claim 16 expressly recites that the unembossed ply is creped.

Claim 11 has been amended to remove the language rejected as vague in favor of more explicit language.

Therefore, in view of these amendments and remarks, withdrawal of the rejections under 35 U.S.C. 112, first paragraph, and second paragraph, is respectfully requested.

Claims 1 and 10-13 were rejected under 35 U.S.C. 102 (b) as being anticipated by Hoeft et al., French 2 775 698. Claims 2-9 and 14 were rejected as being unpatentable under 35 U.S.C. 103 (a) for obviousness in view of Hoeft. Claims 1-14 were also rejected as being unpatentable under 35 U.S.C. 103 (a) for obviousness in view of Babinsky et al., U.S. Patent No. 5,374,468.

Hoeft concerns products with at least two embossed plies. The embossments or protuberances are arranged in such a manner that at least a part of the embossments on one external plies are in coincidence with embossments on the other external plies as it appears from Fig. 1. The present invention, as claimed in amended claim 1, is directed to a product with only one embossed plies.

One object of the invention is to increase the strength and thickness of the product.

According to the prior art, if the objective is to obtain a thicker product, one increases the embossing pressure of both plies in a two-ply product or at least of two plies in a three-ply product. As it is known that embossing reduces strength because the fiber bonds are caused to break, there is a decrease in strength per thickness in the resulting product.

The combination of the invention provides an asymmetric product as to grammage and/or fiber composition. With the invention it is possible to increase the embossing pressure to a rather high level because strength of the laminate is provided by a heavier un-embossed ply.

Babinsky (US 5,374,468), cited in one of the rejections, is not relevant to the present invention because it concerns a paperboard product for making containers or packaging boxes. Paperboard is much heavier than tissue paper and is not creped, and therefore, is not considered within the same class of paper products. The person of ordinary skill would have no reason to take into account the teaching of Babinsky in providing the present invention for tissue paper.

Barnholtz (US 5,906,711) refers to a heterogenous paper sheet. One ply comprises a paper web having a relatively high density continuous network region and having low density discrete regions dispersed throughout the continuous network region. As shown in the figures, the sheet comprises domes 184 of lower density dispersed in a network of higher density. There is no information about the protuberances 35. Contact between both plies is made through the protuberances and the domes. In contrast with the present invention, the number of protuberances is much higher than in Barnholtz, so that the contact between the plies is made through the protuberances only.

The other references cited in the Office action show that the state of the art, before the invention was made, was to combine and laminate at least two embossed webs together. The invention has taught a different approach than the prior art.

Conclusion

In view of the Amendment and Remarks, reconsideration of the application is respectfully requested. Claims 1-16 are now pending and a Notice of Allowance for these claims is earnestly solicited.

Respectfully submitted,

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Amendment Claims with Changes Marked

1. (Amended) A product made of cellulose wadding with a grammage of about 20 to 80 g/m² comprising [an] no more than one embossed ply made of [crêped] creped cellulose wadding having a grammage of 10 to 40 g/m², said embossed ply having patterns of relief consisting at least partly of discrete protrusions facing toward the inside of the structure, and said product having at least one unembossed ply, characterized in that the embossed ply has, over at least a portion of its area, at least 30 protrusions per cm², the area at the top of [which is] each protrusion being less than 1 mm² [and preferably less than 0.7 mm²], the [two plies] embossed ply and the unembossed ply having at least one of different grammages and[/or] different fiber compositions.

11. (Twice Amended) The product as claimed in claim 1, wherein the plies are [associated with] joined to one another.